

FORBES, R.

"Influence of anode and cathode polarization of the corrosion of metals."

Gaz, Wodna I Technika Sanitarna, Warsaw, Vol 28, No 5, May 1954, p. 131

SO: Eastern European Accessions List, Vol 3, No 10, Oct 1954, Lib. of Congress

POPIELSKI, W.

POPIELSKI, W. Electric measurement of losses in weight caused by corrosion of underground constructions. p. 6. GAZA, WODA I TECHNIKA SANIT ARNA. Warszawa, Poland. Vol. 30, No. 1, Jan. 1956

SOURCE: East European Accessions List (EEAL) LC Vol. 5, No. 6, June 1956

POPIELSKI, W.

Prevention of pipe corrosion in Poland. p. 385
(GAZ, WODA I TECHNIKA SANITARNA Vol. 30, No. 10, Oct. 1956. Warsaw, Poland)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 9, Sept. 1957
Uncl.

POLAND/Chemical Technology - Processing of Solid Fossil Fuels.

H-22

Abs Jour : Ref Zhur - Khimiya, No 24, 1958, 82942

Author : Nawara, L., Popielski, W.

Inst : -

Title : The Practice of Storing Coke Gas in Beynes (France).

Orig Pub : Gaz. woda, techn. sanit., 1958, 32, No 1, 5-7.

Abstract : A technological scheme is briefly described concerning the purification of coke gas prior to its transfer to an underground storage place (dust collectors before compressing, oil collector after compressing, adsorbers with activated carbon, final dust collector), as well as the methods presently used for the determination of ammonia compounds, phenols, organic sulfur compounds, cyanogen compounds, NO and butadiene in gas, and in addition, working efficiency of adsorbers in respect to the removal of those harmful components from the gas.

Card 1/1

POLAND/Chemical Technology, Chemical Products
and Their Applications. Corrosion.
Corrosion Control.

H

Abs Jour : Ref Zhur-Khimiya, No 6, 1959, 19810

Author : Popielski, Waslaw

Inst : -

Title : Methods of Determining Safety Current with
a Cathode Shield.

Orig Pub : Gaz, woda i techn. sanit., 1958, 32, No 8,
304-305

Abstract : Seven methods are described for determining
the degree of safety current (mainly of un-
derground pipes) with a cathode shield ba-
sed on plotting of anode and cathode pola-
rization curves, determination of a transi-

Card : 1/2

POPIELSKI, Wacław

18
Corrosion inhibitors: their testing and application in the gas industry. Wacław Popieleski and Zofia Wróblewska. *Gas. Woda i Technika Sanitarna* 32, 830-2(1958).—Three lab. methods for testing corrosion inhibitors after Baker, *et al.* (C.A. 43, 2420g), viz., (a) turbine oil rusting test, (b) static H₂O drop corrosion test, and (c) the fog-cabinet test were reexamd.; a was found much inferior to c, which produces the most severe conditions for the specimen investigated. The times of exposure in the fog cabinet reported by B. were found to be adequate for estg. the quality of the inhibitors. The smoothness of the surfaces of specimens examd. must be strictly controlled in order to obtain comparable results. 62 references. A. Szafrański

3
 1/2/58

C. P. / 6

POPIELSKI, W.; NAWARA, L.

Selecting gas samples for analysis. p. 155.

GAZ, WODA I TECHNIKA SANITARNA. (Stowarzyszenie Naukowo-Techniczne Inzynierow i Technikow Sanitarnych, Ogrzewnictwa i Gazownictwa) Warszawa, Poland.
Vol. 33, No. 3, March 1959

Monthly List of East European Accession (EEAI) LC, Vol. 8, no. 7, July 1959

Uncl.

POPIELSKI, Wacław, mgr inż.

Inspection offtakes of main gas lines. Gaz woda techn sanit
38 no.3:97-98 Mr '64

1. Central Gas Engineering Laboratory, Warsaw.

POPIELSKI, Wacław, mgr inż.; WROBLEWSKA, Zofia, mgr

Experiments in applying sacrificial anode protection in gas engineering. Gaz woda techn sanit 37 no.9:270-274 S '63.

1. Central Gas Engineering Laboratory, Krakow Branch.

LYUBIMOV, N.N., prof., doktor ekon. nauk; PLETNEV, E.P., doktor ekon. nauk; SERGEYEV, S.D., dots., kand. ekon. nauk; MEN'SHIKOV, S.M., doktor ekon. nauk; BUZYKIN, Yu.I., kand.ekon.nauk; DYUMULEN, I.I., dots., kand.ekon.nauk; IKONNIKOV, I.S., kand.ekon.nauk; KUZ'MIN, I.A., dots., kand.ekon.nauk; NESTEROV, M.V.; POPOV, A.N., dots., kand.ekon.nauk; SOLOV'YEV, A.A., kand.ekon.nauk; STEPANOV, G.P., dots., kand.ekon.nauk; SHCHETININ, V.D., dots. kand. ekon. nauk; MOGILEVCHIK, A.Ye., red.; SHLENSKAYA, V.A., red.

[Modern international economic relations] Sovremennye mezhdunarodnye ekonomicheskie otnosheniia. Pod red. N.N.Liubimova. Moskva, Izd-vo "Mezhdunarodnye otnosheniia," 1964. 583 p.
(MIRA 17:5)

1. Moscow. Institut mezhdunarodnykh otnosheniy. 2. Predsedatel' Prezidiuma Vsesoyuznoy trgovoy palaty (for Nesterov).

POPOV, G.A.

Effect of water conditions on body proportions in some
nongregarious shorthorned grasshoppers (Orthoptera,
Acridoidea). Ent. oboz. 42 no.3:512-515 '63.

(MIRA 17:1)

1. Vsesoyuznyy institut zashchity rasteniy, Leningrad.

POPIELSKI, Wacław

Cathode and insulation protection against corrosion.
Przegl techn no.43:5 26 0 '60.

S/081/62/000/022/039/088
B158/B101

AUTHORS: Popielski, Wacław, Wróblewska, Zofia

TITLE: Paste for corrosion protection of metals, particularly underground pipes

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 22, 1962, 309, abstract 221221 (Polish patent 45439; December 27, 1961)

TEXT: Underground pipelines are protected against corrosion by applying a layer of the following paste to their surface (%): sludge from chrome plating 55, naphthenic acids 5, paraffin 10, machine oil 30. The paste components are mixed at an increased temperature and are applied cold. If the paste layer is broken, the pipeline is protected as a result of rapid leaching of the chromates from the paste under the action of water penetrating below the insulating layer. [Abstracter's note: Complete translation.] ✓

Card 1/1

ANAN'YEV, V.A., TKACHEV, P.G., POPIK, A.L., SEMENOV, Ye.P. SINAYKO, G.A.,
LITVAK, Ye.N.

Experiences in the prevention of Botkin's disease with gamma globulin.
Vop.virus 3 no.3:183-185 My-Je '58 (MIRA 11:7)

1. Institut virusologii imeni AMN SSSR, Moskva i Sanitarno-epidemiologicheskaya stantsiya Kishineva.

(HEPATITIS, INFECTIOUS, prevention & control
gamma globulin (Rus))

(GAMMA GLOBULIN, therapeutic use
in prev. of infect. hepatitis (Rus))

POPIL, CZESLAW

myel 2
Sympathicomimetic action of histamine on the isolated small intestine. Jaroslaw Billewicz-Stankiewicz and Czeslaw Popik. *Ann. Univ. Mariae Curie-Skłodowska, Lublin-Polonia*, Sect. D 10: 485-505 1975. English summary. — The inhibitory phase of the peristaltic movement of the isolated small intestine of the rabbit caused by histamine can be related to adrenaline released in the tissue. The phenomenon is a fragment of a more general biological action of histamine as a secretory impulse for the secretion of adrenaline in various organs. Alina B. Szczepaniak

POPIK, C.
BILLEWICZ-STANKIEWICZ, J.; POPIK, C.

Changes of irritability of the vagus nerve following intravenous drip administration of histamine. Acta physiol. polon. 8 no.3:284-285 1957.

1. Z Zakladu Patologii Ogolnej A. M. w Lublinie. Kierownik: doc. dr J. Billewicz-Stankiewicz.

(NERVES, VAGUS, effect of drugs on,
histamine on irritability, intravenous drip. admin (Pol))
(HISTAMINE, effects,
on vagus nerve irritability, intravenous drip. admin. (Pol))

GERGELY, Rezső, dr.; POPIK, Ervin, dr.

Tietze syndrome. Orv. hetil. 97 no.6:156-158 5 Feb 56.

1. A Budapesti Orvostudományi Egyetem I. sz. Sebészeti Klinikájának
(igazgató: Hedri Endre dr. egyet. tanár) közl.

(RIBS, dis.

Tietze's synd.(Hun))

PATAKY, Zsigmond, dr.; NAGY, Laszlo, dr.; POPIK, Ervin, dr.

Primary argentaffin tumor developing from the head of the pancreas. Orv.hetil. 100 no.39:1419-1420 S '59.

1. A Budapesti Orvostudományi Egyetem I. sz. Sebészeti Klinikájának (igazgató: Hadri Endre dr. egyetemi tanár) és a II. sz. Kórházban (igazgató: Haranghy Laszlo dr. egyetemi tanár) közleménye.

(PANCREAS neoplasms)

(ARGENTAFFINOMA case reports)

POPIK, S. L. CHISTYAKOV, G. K.

25225. POPIK, S. L. CHISTYAKOV, G. K. Dezinfektsionnaya Kamerauproshehnogo
Tipa. Sov. Meditsna, 1949, No. 8. S-39-40.

SO: Letopis' No 33, 1949

1. FOFIK, V.
2. USSR (600)
4. Television - Receivers and Reception
7. Measuring high frequency voltage of the hetrodine of the receiver. Radio No. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, May 1953, Uncl.

BARSHTEYN, V.A., inzh.; GOKHVAI, P.P., inzh.; YEGOROV, V.V., inzh.; POPIK, V.N.,
inzh.

Dressing the contact track of wirewound resistors of potentiometers.
Priborostroenie no.6:19 Ja '65. (MIRA 18:7)

S/058/62/000/006/131/136
A062/A101

AUTHORS: Popik, Yu. V., Dovgoshey, N. I.

TITLE: Applying the method of N. A. Tolstoy and P. P. Feofilov to investigate the photoconductivity kinetics of photoresistors made of mercury iodide

PERIODICAL: Referativnyy zhurnal, Fizika, no. 6, 1962, 29, abstract 6-3-57v
("Dokl. i soobshch. Uzhgorodsk. un-t. Ser. fiz.-matem. n.", 1961, no. 4, 56 - 57)

TEXT: For investigating the photoconductivity kinetics in specimens of mercury iodide, Hg I₂, the method of Tolstoy's and Feofilov's taumeter was employed. When illuminating the Hg I₂ specimens by rectangular light pulses, the increase and decrease of the photocurrent can be described by two exponential functions. Alternate rectifying two sections of the curve on the screen of an oscillograph permits the determination of the life durations of the photocurrent carriers. The measuring arrangement comprises a monochromator and a broad band amplifier for the photocurrent pulses. There are 4 references.
[Abstracter's note: Complete translation] V. L.

Card 1/1

L 8679-65 EWT(1)/EPA(s)-2/EWD(k)/EWT(n)/EEG(k)-2/T/EEG(b)-2/EWP(b)/EWA(h) Pa-h/
 Pz-5/Pl-10/Peb LJP(a)/AS(mp)-2/ESD/EPWI/ESD(t)/EAEM(t) JD/JG
 ACCESSION NR: AT4046104 S/3114/61/000/004/0056/0057

AUTHOR: Popik, Yu. V.; Dovgoshey, N. I.

TITLE: Application of the method of N. A. Tolstoy and P. P. Feofilov to the study of the kinetics of photoconductivity of photoresistors of mercurous iodide 23

SOURCE: Uzhgorod, Universitet. Doklady* i soobshcheniya. Seriya fiziko-matemati-
 cheskikh nauk, no. 4, 1961, 56-57 27 27

TOPIC TAGS: photoconductivity, photoresistor, mercurous iodide 15

ABSTRACT: The method of Tolstoy and Feofilov was originally developed for the study of relaxation processes. The present authors describe the application of the method to the study of the kinetics of photoconductivity of photoresistors of mercurous iodide. The method is applicable since the rise and fall of the photocurrent in such a photoresistor, subjected to square-wave impulses of light, can be expressed approximately as a sum of exponential functions. The authors describe an experimental set-up whereby, upon irradiating samples of the photoresistors with visible monochromatic light of various wavelengths, the lifetimes of the carriers of the photocurrent can be determined. This can be helpful in clarifying

Card 1/2

E 8679-65

ACCESSION NR: AT4046104

the energy properties of the substance. "The authors thank D. V. Chepur (Cand. in the
Phys. Math. Sci.) for his constant interest in the work and a series of valuable consulta-
tions." Orig. art. has: 1 formula. 2

ASSOCIATION: Uzhgorodskiy gosuniversitet (Uzhgorod State University)

SUBMITTED: 00 \

ENCL: 00

SUB CODE: SS

NO REF SOV: 004

OTHER: 000

Card 2/2

S/194/62/000/006/083/232
D413/D308

9.4/60

AUTHORS: Popik, Yu.V., and Dovgoshey, N.I.

TITLE: The application of the method of N.A. Tolstoy and P.P. Feofilov to investigating the photoconductivity kinetics of mercuric iodide photoresistors

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 6, 1962, abstract 6-3-57 v (Dokl. i soobshch. Uzhgorodsk. univ., Ser. fiz.-matem. nauk, no. 4, 1961, 56-57)

TEXT: The tau-meter method of Tolstoy and Feofilov has been used in investigating the photoconductivity kinetics of samples of mercuric iodide HgI_2 . When samples of HgI_2 are illuminated with rectangular pulses of light, the rise and fall of the photoelectric current can be described by two exponential functions. Consecutive rectifications of the two sections of the curve on an oscilloscope screen makes it possible to determine the life-times of the photoelectric current carriers. The measuring installation includes a Card 1/2

The application of the method ...

S/194/62/000/006/083/232
D413/D308

mono-chromizer and a broadband amplifier of photo-current pulses.
4 references. [Abstracter's note: Complete translation.]

✓
R

Card 2/2

I-10771-67 DWT(m)
ACC NR: RU7003504

SOURCE CODE: UR/0076/66/040/005/1356/1360

AUTH: Sharifbrants, Yu. A.; Ponik, M. V.

OR: Physics Faculty, Moscow State University (Moskovskiy gosudarstvennyy universitet, Fizicheskiy fakul'tet); Physicomathematical Faculty, Uzhgorod State University (Uzhgorodskiy gosudarstvennyy universitet, Fiziko-matematicheskij fakul'tet)
"Adsorption of Water Vapor on the Surface of Oxidized PbS Powder"

21

Moscow, Zhurnal Fizicheskoy Khimii, Vol 40, No. 6, pp 1356-1360

ABSTRACT: The sensitivity of PbS photoresistances is increased considerably by heating them in the air. During this treatment chemisorption of oxygen on the surface and formation of oxidized compounds in the volume take place. Chemisorption cannot be differentiated from oxidation in the volume if the amount of oxygen that is taken up by PbS is determined gravimetrically, whereas adsorption of water vapor on oxidized PbS depends on the amount of O-containing complexes formed on the surface only. Determination of water vapor adsorption isotherms on PbS powder samples (natural galenite powder with a specific surface of $1.2 \text{ m}^2/\text{g}$) oxidized at 20, 100, 200 and 300° indicated that the amount of water adsorbed did not vary with the temperature of oxidation and was close to that corresponding to monomolecular filling of the surface. On the basis of the result obtained, the concentration of hydrated O-containing complexes on the PbS surface was of the order of $10\text{-}15$ micromoles/ m^2 and had the same value independently of the temperature of oxidation. The authors thank V. F. Kisilev for discussing the results of the work.

Orig. art. has: 2 figures. JPRS: 38,967

TOPIC TAGS: adsorption, chemisorption, lead compound

SUB CODE: 07 / SUBM DATE: 08Jun65 / ORIG REF: 009 / OTH REF: 003

Card 1/1 UDC: 541.183

0926 0039

5(2), 7(0)

SOV/32-25-1-51/51

AUTHOR:

Popikov, F.

TITLE:

On the Determination of Moisture and Oil in Iron Turnings
(Ob opredelenii vlagi i masla v zheleznoy struzhke)

PERIODICAL:

Zavodskaya Laboratoriya, 1959, Vol 25, Nr 1, pp 128-128 (USSR)

ABSTRACT:

In this paper the sum of moisture plus oil in iron turnings is determined as follows:
The sample taken in the usual way (200 g) is heated in a heat-resistant steel crucible to 250-300° for one hour. Then the crucible (with the sample) is heated to 500-600° in an open muffle furnace, the oil burning up within 5-10 minutes. The cooled sample is then weighed.

ASSOCIATION: Zavod "Elektrostal'" ("Elektrostal'" Works)

Card 1/1

USCIB-DC-60,550

POPIKOV, M.N.

Lifting jack. Mashinostroitel' no.11:29 H '59.

(MIRA 13:3)

(Lifting jacks)

POPIKOV, M.N., inzh.

▲ 100-ton hydraulic press. Mashinostroitel' no.3:8-9
Mr '60. (MIRA 13:6)

(Hydraulic presses)

24.2600

S/058/62/000/005/053/119
A057/A101

AUTHORS: Popik, Yu. V., Dovgoshey, N. I.

TITLE: The use of the method of N. A. Tolstoy and P. P. Feofilov for the study of photoconductivity kinetics of mercuric iodide photo-resistances

PERIODICAL: Referativnyy zhurnal, Fizika, no. 5, 1962, 65, abstract 5V443
("Dokl. i soobshch. Uzhgorodsk. un-t. Ser. fiz.-matem. n.", 1961, no. 4, 56-57) √B

TEXT: It is demonstrated that the oscillographic method for the investigation of relaxation processes, suggested by N. A. Tolstoy and P. P. Feofilov (method of "taumeter") ("Uspekhi fiz. nauk", 1950, v.41, no. 44) can be used for the study of the photoconductivity of HgI_2 , the kinetics of which are approximated by the sum of two exponents ($\tau_1 = 5 - 8 \cdot 10^{-4}$, $\tau_2 = 1 - 2 \cdot 10^{-4}$ sec). A short description of the apparatus for the investigation of photoconductivity kinetics of samples during irradiation by visible monochromatic light of various wavelengths is given.

P. F.

[Abstracter's note: Complete translation]

CARD 1/1

POPIKOV, M.N., inzh.

Redesigning of the rollers of a grab crane. Energetik 11 no.7:18
Jl '63. (MIRA 16:8)

(Cranes, derricks, etc.)

POPIKOV, M.N., inzh.

Device for instantaneous stopping of conveyors. Stroi. i dor. ~~resh.~~
9 no.10:28 0 '64. (MIRA 18:1)

POPIKOV, M.N., inzh.

Double joints for the slip rings of bridge-type bucket cranes.

Energetik 13 no.1:29 Ja '65.

(MIRA 18:3)

POPIKOV, M.N.

Device eliminating breakage in the bendable cable for the bucket on
the E-2005 excavator. Stroil. i dor. mash. 10 no.2:20 F '65.
(MIRA 18:3)

L 35525-65 EWG(j)/EWT(m)/EPF(c)/EWP(j)/T/EWA(h)/EWA(1) PC-4/Pr-4/Peb RM
 ACCESSION NR: AP5008205 S/0286/65/000/005/0071/0072
 35

AUTHORS: Ginder, O. A.; Grachev, N. M.; Popilin, O. N.; Lifits, A. L.; Ponomareva, Ye. N.; Telegin, V. G.; Tokareva, A. A.

TITLE: A method for producing plastic scintillators. Class 39, No. 168884 15

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 5, 1965, 71-72

TOPIC TAGS: plastic, scintillator, polymerization

ABSTRACT: This Author Certificate presents a method for producing plastic scintillators by thermal polymerization in bulk of vinyl toluene in the presence of phosphors. In order to increase the light output and the heat resistance of the scintillators, a mixture of ortho- and paravinyl toluene is used for the vinyl toluene isomers.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut monokristallov (All-Union Scientific Research Institute of Single Crystals)

SUBMITTED: 06Mar64

ENCL: 00

SUB CODE: MT, OP

NO REF SOV: 000

OTHER: 000

Card 1/1

CZECHOSLOVAKIA

Vladimir BOZEK and Josef HAVILKA MD and Head (pracovník) Department of Surgery of Military Hospital (Chirurgické oddělení vojenské nemocnice,) Pízen.

"Treatment and Care of Multiple Leg Fractures."

Prague. Vojenské Zdravotnické Listy, Vol 31, No 6, Dec 67; pp 252-253.

Abstract [English summary modified]: Case of comminuted fracture of femur, patella and tibia in aviator who had motorcycle accident; immediate surgical care resulted in relatively rapid and complete cure. Four Western and 1 Czech reference.

POPILKA, Josef, C. Sc.

Surgery of traumatic spondylolisthesis by transperitoneal fixation
with a bone nail. Acta chir. orthop. trauma. Cech. 28 no.1:56-63
F '61.

1. Posadkova nemocnice v Plzni.

(SPONDYLOLISTHESIS surg)

POPILKA, J.

"The unsupported plaster cast and auxiliary methods of fixation." p. 378. (CASOPIS
LEKARU CESKYCH, Vol. 92, no. 14, Apr. 1953, Praha.)

SO: Monthly List of East European Accessions, Vol. 2, 10, Library of Congress
October 1953, Uncl.

POPILKA, Josef, MUDr. Plukovník

Plaster cast without padding and other auxiliary fixation methods.
Voj.zdrav.knihovna Vol 13:1-192 1954.

(PLASTER CASTS

without padding, technic)

(FRACTURES, therapy
fixation methods)

POPIKA, Josef. Pk. MUDr.

Clinical manifestations and therapy of so-called cystic degeneration of the lateral knee meniscus. Acta chir. orthop. traum. cech. 24 no.4: 285-295 July 57.

1. Chirurgické oddelení 3. ON v Plzni.

(KNEE, cysts

traum. cystic degen. of lateral meniscus, clin. manifest.
& ther. (Cz))

POPILOV, L. Ya.

24

Fused diabase in reaction apparatus and some peculiarities of its use. L. Ya. Popilov. J. Chem. Ind. (U. S. S. R.) 15, No. 10, 1625 (1958). Slabs of fused diabase joined by a cement made of the same material powdered and mixed with water glass give a good protective lining to prevent corrosion in chem. app. H. M. Leicester

ASD-15A METALLURGICAL LITERATURE CLASSIFICATION

POPILOV, L. Ya

Lining of vats with fused diabase. L. Ya. Popilov. *Dumashnaya Prom.* 10, No. 1, 73-4 (1938); cf. C.A.: 83, 4379.—Concrete vats for the soln. of alums and Al_2O_3 in acids in the prepn. of paper sizes were lined with fused diabase tiles ($220 \times 110 \times 25$ mm.) with the aid of a binder constg. powd. diabase 93, Na_2SiF_6 , 5 and BaSiO_3 , 2% and water glass to a required consistency. After the 11 months' use, the vats and lining showed no signs of chem. and mech. disintegration. Chas. Blanc

1ST AND 2ND ORDERS																										PROCESSES AND PROPERTIES USED																									
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POPILOV, L. Ya Cast diabase as a material for equipment in the pulp and paper industry. L. Ya. Popilov. <i>Russkaya Prom. 10, No. 3, 32-8 (1938); et. C. A. 30, 1939.</i> Chas. Blane 25																																																			
ASO-51A METALLURGICAL LITERATURE CLASSIFICATION																																																			

1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
PROCESSES AND PROPERTIES INDEX																			
POPILOV, L. Ya. ca Acid-resistant cement. L. Ya. Popilov. Russ. 50,000, Apr. 30, 1941. Fused diatom or other mineral is ground, stored in water, and then dried to activate the surface of the particles. It is then incorporated in the usual cement mixt. 20																			
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION																			
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CA 9 Electrolytic polishing—a new method of metallographic technique. L. Ya. Popilov. <i>Zavodskaya Lab.</i> 11, No. 1, 60-71 (1948).—The optimum conditions and the electrolytes producing best results with the various metals used are described. Best results are obtained with H_2PO_4, HBF_4, H_3PO_4 + H_2SO_4 + H_2CrO_4 + glycerol + ethylene glycol, H_2SO_4 + citric acid, H_2SO_4 + org. substances. Good results are obtained with $MeOH$ + HNO_3 and $EtOH$ + HNO_3, but these mixts. require higher potentials (80-120 v.) and the process is more complicated and difficult. Various effects (ranging from coarse corrosion and pitting to quality polishing of the surface) can be obtained by changing the potential. The abs. value of the potential in the cell has no noticeable effect on the quality, provided the required potential is sustained. Gas formation at the anode does not affect the quality of the surface if the adhesion of the gas bubbles is not great. Forty-one references. W. R. Henn																																																																																																							
ASB-11A METALLURGICAL LITERATURE CLASSIFICATION																																																																																																							
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<i>M</i> New Electrical Methods for Treating Metals. L. Ya. Popikov. (Vestn. Mashinostroyeniya, 1948, 25, (9/10), 47-54; <i>O. Abn.</i>, 1948, 69, 4961).—[In Russian]. A review of metal-treating methods which utilize electrical energy directly, including anodic polishing, electric erosion, and electrochemical removal of scale.																																																			
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION																										SIGNI ROMATV																									
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4

Electropolishing. L. Ya. Popilov. U.S.S.R. 66,401. May 31, 1946. A layer of Hg (serving as one electrode) in the bottom of a container is sepd. from the electrolyte by a layer of nonconducting liquid, e.g., CCl₄. The other electrode dips into the electrolyte. When the article to be treated is lowered to the bottom the circuit is closed. Withdrawing of the piece breaks the circuit.

M. Hosh

ASP-SLA METALLURGICAL LITERATURE CLASSIFICATION

16

Electrolytic Polishing of Metallographic Sections. L. P. Zaitzeva and L. J. Popilov. *Engineers' Digest* (American Edition), v. 4, Apr. 1947, p. 194-195. Abstracted from *Zavodskaja Laboratoriya*, nos. 7 and 8, 1946, p. 679-692.

Describes a comprehensive series of experiments with the object of establishing the conditions for successful polishing of a number of constructional carbon steels, high and low carbon, and high and low alloy steels.

ASH-31A METALLURGICAL LITERATURE CLASSIFICATION

COMMON ELEMENTS

COMMON VARIABLES INDEX

Electrolytic polishing of metallographic sections. L. P. Zaitseva and L. Ya. Popilov. *Zavodskaya Lab.* 12, 070-92 (1946) (in Russian). — With c.d. 10–100 amp./sq. dm., 1–60 min., temp. 15–25 and 70–80°, neither solns. of H_2PO_4 (26–43%), with or without addn. of citric acid, glycerol or ox. lble. nor solns. of H_2SO_4 (24–68%), with or without addn. of glucose, peptone, or citric acid, proved suitable; pitting occurred in all samples. Satisfactory results were obtained with mixts. of H_2SO_4 (12–19%), and H_2PO_4 (81–68%) with addna. of glycerol, citric acid, lactic acid, or casein; H_2PO_4 81, H_2SO_4 12, H_2O 0.5, glycerol 24, or H_2PO_4 67.9, H_2SO_4 19.3, H_2O 10.7, casein 2.1, etch stainless, acid-resistant and high-speed steel at room temp. and polish when hot. Mixts. of H_2PO_4 (70–81.5%), H_2SO_4 (11.5–17%), and CrO_3 (3.5–6.5%), without addn., act essentially in the same way, on all steels, both C and alloy; these electrolytes are not, however, effective when freshly prepd. but improve on working up to a certain stage, after which their efficiency and throwing power fall off rapidly. The condition of the H_2PO_4 - H_2SO_4 - CrO_3 bath can be diagnosed by visual colorimetric comparison with a standard Cr^{III}/Cr^{VI} scale: the bath polishes in the medium interval $Cr^{III}/Cr^{VI} = 1:1$ to 4:1, etches at 1:4 and 9:1 and corrodes at more extreme values of that ratio; these limits are valid for a soln. of sp. gr. 1.6–1.7; η , 7–20 centipoises. Artificial conditioning of the freshly prepd. H_2PO_4 76.5, H_2SO_4 11.5, H_2O 6, CrO_3 6 electrolyte was attempted by passing a current in the cold and hot soln. and by evap. at 120°; the latter procedure proved most effective. A bath requiring but a very short preliminary conditioning can be prepd. directly from the anhydrous ingredients: H_2SO_4 (d. 1.84) 12.1, H_2PO_4 (d. 1.54) 81.3, CrO_3 (solid) 0.6%. A bath having departed from the correct sp. gr., η and Cr^{III}/Cr^{VI} criteria in the course of operation, is best re-

generated by electrolytic oxidation with the Pb tank as anode and an immense porous vessel contg. a Pb cathode, at an anodic c.d. 0.5 amp./sq. dm., until the correct characteristics are reached; the etching-polishing ability of the bath is then fully restored. Regeneration by addn. of CrO_3 , upsetting the total Cr content, or by chem. oxidation with $(NH_4)_2S_2O_8$, is not recommended. The correct H_2PO_4 - H_2SO_4 - CrO_3 of the given compn. is universal; best conditions for polishing are, for C steels, 30–40 amp./sq. dm., for medium-alloy steels 40–60, for high-alloy 60–70; temp. 75–90°, 8–15 min. The medium Cr^{III}/Cr^{VI} , normally polishing electrolyte, can be made to etch by lowering the c.d. to 15–30 amp./sq. dm. and the temp. to 40–60°. The c.d., time, and temp. conditions are const. for a given steel, irrespective of its heat-treatment, except for a slight increase of pitting in annealed and highly tempered samples. After unsatisfactory etching, samples can be repolished and re-etched. Drawbacks of the electrolytic methods are curvature of the polished surface, leaching out of certain inclusions and components, some amt. of opaque or colored film, striation and spotting. Main advantages are absence of mechanical and thermal changes and high fineness of structural detail.

W. R. Henn

POPILOV, I. YA.

Elektropolirovka metallov. Moskva, Mashgiz, 1947. 123 p. illus.

Bibliography: p. 117-122.

Electric polishing of metals.

NN

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

POPILOV, L. YA.

PA 02171

USSR/Metals
Metallurgy
Electrochemistry

Mar 1948

"New Electrochemical Methods for Finishing Metals in Laboratory Practice," L. Ya. Popilov, 3 pp

"Zavod Lab" Vol XIV, No 3

Describes laboratory equipment for anode-mechanical cutting of metals and alloys; anode-mechanical milling of laboratory samples. Briefs performance of the equipment and quality of the finishing processes.

62171

POPILOV, L. Ya.

25772. POPILOV, L. Zhidkoe steklo. Ill. V. Buravlev. Znaniesila, 1949, No. 7, s. 33-35.

SO: Letopis' Zhurnal'nykh Statey, Vol. 34, Moskva, 1949

POPILOV, L. YA.

Apr 49

USSR/Metals
Metallurgy
Magnetic Materials

"A Simple Method of Obtaining Magnetic Powder,"
L. Ya. Popilov, Experimental Lab for Elec Process-
ing of Metals, 1 p

"Zavod Lab" Vol IV, No 4

Successfully applied a new method to obtain mag-
netic powder, based on use of electric-arc break-
down of metals. Metal to be pulverized is subjected
to action of a powerful arc discharge in a liquid
medium (water) and is transformed into a highly
dispersed metallic dust. Powders obtained are
deposited or centrifuged, washed with ammonium and
dried.

43/49T/8

POPILOV, L. YA. and L. I. KOZLOVSKII.

Elektroiskrovaia obrabotka metallov. Leningrad, Mashgiz, 1950. 129 p.

Electric spark technique in metal working.

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

Popilov, L.Ya.

Doc Sci - Inst.

192/103

621.9 :621.785.54

Electric Spark-Hardening of Tools

Stanki i Instrum.

(5), 17-19

1951

U.S.S.R.

Index

Aeronautics

March 1954

Machine Tools

and Operations

L.Y. Popilov

In this process an electrical impulse discharge is applied to the surface of a steel cutting tool. The tool acts as one electrode, the other being a metal or carbon rod called the hardening electrode. The high heat concentration caused by the discharge leads to high-speed quenching of fused metal and its hardening as a meta-stable austenite, the dissolution of nitrogen from the air in the fused metal and the forming of solid nitrides in the austenite and the dissolution of carbon and other elements from the hardening electrode in the fused metal. A criterion of effectiveness of the process is taken as the ratio of the times between regrinds for hardened and untreated tools, keeping the same feeds and speeds and measures of wear. Values based on this criterion found in practice for turning tools, milling cutters, drills, chisels, press tools and counterboring cutters are tabulated. (From Engrs' Dig. 14(11), 424-425, Nov., 1953, U.K.)

POPILOV, L. YA.

Alekseyev, A. V. and Popilov, L. Ya.

Machine Tools

Elektrouprochnenie instrumenta. Pod obshchey redaktsiyey...V. N. Guseva.
(Bibliotekha elektrotehnologa. Vypusk IX)
Leningrad, Gosudarstvennoe Nauchno-Tekhnicheskoye Izdatel'stvo
Mashinostroitel'noy Literatury, 1952. pp. 69, photos, diags., tables, 22 x 15.

LXIII-2

FRANK I BOOK EXPLOITATION

5/1 1/3

Page 2/3

Popilev, L. Ya.

KOSOLAPOV, I. I.; KOSMACHEV, I. G.; VISHNITSKIY, A. L.; POPILOV, L. Ya., inzhener, retsenzent; SLOVIMSKIY, V. I., [deceased], kandidat tekhnicheskikh nauk, redaktor; DLUGOKANSKAYA, Ye. A., tekhnicheskiiy redaktor

[Work with anodic-mechanical grinders] Rabota na anodno-mekhanicheskikh zatochnykh stankakh. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroitel'noi lit-ry, 1952. 172 p. [Microfilm] (MIRA 9:3)
(Grinding and polishing)

PHASE I BOOK EXPLOITATION

1089

Popilov, L.Ya., Demchuk, I.S., Bogorad, I.Ya., Bogorad, L.Ya.,
Kaznachey, B.Ya., Belyayev, G.S., Askinazi, B.M., Zaytseva, L.P.,
Dyatchenko, A.P.

Elektrotekhnologiya (Electrical Methods of Processing Materials)
[Leningrad] Sudpromgiz, 1952. 377 p. 5,000 copies printed.

Resp. Ed.: Slonimskiy, V.I.; Ed.: Lachininskaya, O.V.; Tech. Ed.:
Frumkin, P.S.

PURPOSE: This book is intended as a practical guide for engineering
and technical personnel of industrial establishments and for workers in
design and planning organizations and scientific-research institu-
tes. It may also be useful to students of vuzes and tekhnikums.

COVERAGE: The book explains the technology of processing and finish-
ing metals and materials by electrical methods. No personalities
are mentioned. There are 46 references, all Soviet.

Card 1/8

Electrical Methods (Cont.) 1089

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2-5-59

FOR L. Ya.

*J. of the Iron & Steel Inst.
V-176 Feb 1954
Heat-Treatment & Heat-
Treatment Furnaces*

On the Use of Alternating Current in the Electromechanical Surface Hardening of Tools and Machine Parts. L. Ya. Popilov. (*Vestnik Mashinostroyeniya*, 1952, 32, (9), 60-61). Views on the mechanism of the electromechanical surface hardening of steels are surveyed. The results obtained when using direct and alternating currents are compared. It is concluded that electrohardening equipment can be simpler and cheaper if alternating current is used.—v. g.

① Met

POPILOV, L. YA.

PHASE I

TREASURE ISLAND BIBLIOGRAPHICAL REPORT

AID 516 - I

BOOK

Call No.: AF613036

Author: POPILOV, L. YA.

Full Title: TECHNOLOGY OF ELECTRO-POLISHING OF METALS

Transliterated Title: Tekhnologiya elektropolirovaniya metallov

PUBLISHING DATA

Originating Agency: None

Publishing House: State Scientific and Technical Publishing House
of Machine-Building Literature (Mashgiz)

Date: 1953

No. pp.: 254

No. of copies: 5,000

Editorial Staff

Editor: Yampolskiy, A. M., Eng.,

Editor-in-Chief: Nikitin, P. S., Eng.

Appraiser: Batashev, K. P., Kand. of Tech. Sci.

PURPOSE: This book is written for a wide circle of engineering and technical workers specializing in metal working and finishing in plants and laboratories and also for students of technical schools.

TEXT DATA

Coverage: This book contains information on the nature, special features and applications of electro-polishing -- an electrolytic means of metal finishing. Diagrams, photos, graphs, tables.

No. of References: 87 Russian, dated 1937-1952

Facilities: None

1/1

POPILOV, L. YA.

*Moscow Steel Inst
in Stalinsk*

Journal of the Iron and Steel Institute
Vol. 176
Apr. 1954
Heat-Treatment and Heat-Treatment
Furnaces

①
Electric Hardening of Tools. L. Ya. Popilov. (*Stanki i Instrument*, 1953, (6), 17-18). [in Russian].—The theory, methods and applications of the electric-spark hardening of steel surfaces are considered. Following a description of the apparatus, the effect of the process on the hardness, durability, and quality of the treated surface are discussed, various hardening electrode materials being compared. The results of an extensive investigation of industrial spark-hardening experience are summarized. The evolution of heat is the main surface-modifying effect, migration of elements in the discharge and by contact being secondary. Conditions for treating carbon and high-speed steels and the properties and depths of the resulting surfaces are tabulated.—S. K.

9-27-54
dyt

POPILOV, L.Ya.

Electric hardening of tools. Stan. i instr. 24 no.5:17-19 My '53.

(MLRA 6:6)

(Electric spark)

YUTKIN, L.A., POPILOV, L.YA, inzhener; redaktor; ~~FETISOV~~, P.I.,
inzhener, redaktor; ~~POE~~'SKAYA, R.G., tekhnicheskii redaktor;

[Electrohydraulic effect] Elektrogidravlicheskii effekt.
Moskva, Gos.Nauchno-tekhn.izd-vo mashinostroitel'noi lit-ry,
1955. 49 p. (MLRA 8:9)
(Electric discharges)

POPILOV, Lev Yakovlevich; ZAYTSEVA, Lidiya Pavlovna; FOMIN, N.V., redaktor;
GOLYATKINA, A.G., redaktor; EVENSON, I.M., tekhnicheskii redaktor

[Electrolytic polishing and etching of metallographic sections] Elektro-
polirovanie i elektrotravlenie metallograficheskikh sblifov. Moskva,
Gos.nauchno-tekhn.izd-vo lit-ry po cherno i tsvetnoi metallurgii, 1955.
310 p. (MLRA 9:2)

(Metallography) (Polishing, Electrolytic)

Popilov, L. Ya.

USSR/ Scientific Organization - Conference

Card 1/1 Pub. 103 - 18/22

Authors : Popilov, L. Ya.

Title : ~~A conference on grinding and polishing~~
A conference on grinding and polishing

Periodical : Stan. 1 instr. 6, 35-36, June 1955

Abstract : In 1954, in Leningrad a scientific and technical conference was held by the Leningrad Departments of the All-Union Mechanical Engineers Scientific and Technical Society, and All-Union Research Institute for Medical Instruments, on problems related to grinding and polishing metal. Abstracts of works and lectures presented at the conference, are given. Tables.

Institution :

Submitted :

POPILOV, L. Ya.

AID P - 4140

Subject : USSR/Electricity

Card 1/2 Pub. 27 - 27/33

Author : Popilov, L. Ya., Eng., Leningrad

Title : Scientific and industrial conference on electric methods of processing metals. (Current events).

Periodical : Elektrichestvo, 12, 76-77, D 1955

Abstract : In July, 1955, a conference took place in Leningrad on the subject of electric methods of processing metals. Over 400 representatives of various educational, scientific, design and industrial organizations and establishments participated. The author gives a summary of the discussions. The reports presented at the conference were published in a book under the editorship of the author of this article. Some of the reports were published in this journal, Nos. 9 and 10, 1955. One diagram.

POPILOV, Lev Yakovlevich; VOLKOV, D.A., kandidat tekhnicheskikh nauk,
redaktor; KAPLANSKIY, Ye.F., redaktor izdatel'stva; SOKOLOVA,
L.V., tekhnicheskiy redaktor

[Safety engineering in the electrical working of metals] Tekhnika
bezopasnosti pri elektricheskikh sposobakh obrabotki metallov.
Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1956.
174 p. (MLRA 9:10)

(Metalwork--Safety measures)

Handwritten: K. P. Y.

ANTIPOV, K.P., inzhener; BALAZHIN, B.S., doktor tekhnicheskikh nauk, professor; BARYLOV, G.I., inzhener; BRYZEL'MAN, R.D., inzhener; BERDICHEVSKIY, Ye.G., inzhener; BOBKOV, A.A., inzhener. KALININ, M.A., kandidat tekhnicheskikh nauk; KOVAN, V.M., doktor tekhnicheskikh nauk, professor; KORCHAEV, V.S., doktor tekhnicheskikh nauk; KOSILOVA, A.G., kandidat tekhnicheskikh nauk; KUDRYAVTSEV, N.T., doktor khimicheskikh nauk, professor; KURYSHEVA, Ye.S., inzhener; LAKHTIN, Yu.M., doktor tekhnicheskikh nauk, professor; NAYERMAN, M.S., inzhener; NOVIKOV, M.P., kandidat tekhnicheskikh nauk; PARIY-SKIY, M.S., inzhener; PEREPONOV, M.N., inzhener; ~~POBILOV, I.Ye.~~, inzhener; POPOV, V.A., kandidat tekhnicheskikh nauk; SAVERIN, M.M., doktor tekhnicheskikh nauk, professor; SASOV, V.V., kandidat tekhnicheskikh nauk; SATUL, E.A., doktor tekhnicheskikh nauk, professor; SOKOLOVSKIY, A.P., doktor tekhnicheskikh nauk, professor [deceased]; STANKOVICH, V.G., inzhener; FRUMIN, Yu.L., inzhener; KHRAMOV, N.I., inzhener; TSEYTLIN, L.B., inzhener; SHUKHOV, Yu.V., kandidat tekhnicheskikh nauk; BABLIN, S.I., kandidat tekhnicheskikh nauk; VOLKOV, S.I., kandidat tekhnicheskikh nauk; GORODETSKIY, I.Ye., doktor tekhnicheskikh nauk, professor; GOROSHEIN, A.K., inzhener; DOSCHATOV, V.V., kandidat tekhnicheskikh nauk; ZAMALIN, V.S., inzhener; ISAYEV, A.I., doktor tekhnicheskikh nauk, professor; KEDROV, L.N., kandidat tekhnicheskikh nauk; MALOV, A.N., kandidat tekhnicheskikh nauk; MARDANYAN, M.Ye., inzhener; PANCHENKO, K.P., kandidat tekhnicheskikh nauk; SEKRETEV, D.N., inzhener; STAYEV, K.P., kandidat tekhnicheskikh nauk; SYROVATCHEVO, P.V., inzhener; TAURIT, G.G., inzhener; AL'YASHEVA, M.A., kandidat tekhnicheskikh nauk;

(Continued on next card)

ANTIPOV, K.F. --- (continued) Card 2.

GRANOVSKIY, G.I., redaktor; DEM'YANYUK, F.S., redaktor; GUBOV, V.Y., redaktor; CHARUKO, D.V., redaktor; Mandus, M.Ye., izdatel, red. [deceased]; SOKOLOVA, T.F., tekhnicheskij redaktor

[Machine builder's manual] Spravochnik tekhnologov mashinostroitel'stva v dvukh tomakh, red.sovet V.M.Kovan. Chleny red. soveta S.S.Balukina i dr. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry. Vol. 1. (Pod red. A.G.Kosilova) 1956. 660 p. Vol. 2. (Pod red. A.M. Malova) 1956. 584 p. (Mach 1959)
(Machinery industry)

Popilov, L. Ya.

AID P - 4296

Subject : USSR/Engineering

Card 1/1 Pub 128 - 21/25

Author : Popilov, L. Ya., Engineer

Title : Second Conference on new electrical methods for machining metals.

Periodical : Vest. mash., #2, p. 66-68, F 1956

Abstract : This is a short review of the scientific and industrial conference held in Leningrad, June 3-9, 1956, organized by the Electrical Machining Section of the Leningrad and Moscow Branches of the All-Union Industrial Mechanical Engineers Scientific and Technical Society (VNITOMASHPROM). Eighty papers read at the conference have been later published under the title: Novyye elektricheskiye metody obrabotki materialov: Sbornik pod red. L. Ya. Popilova. Mashgiz, 1955.

Institution : None

Submitted : No date

POPILOV, L.Ya., inzhener.

Spot welding for the repair of worm parts in ship machinery. Sudostroenie 22 no.5:31-35 My '56. (MLRA 9:9)
(Electric welding) (Ships--Maintenance and repair) (Hard facing)

25(5)

PHASE I BOOK EXPLOITATION

SOV/1317

Kirovskiy rayon Leningrada v bor'be za tekhnicheskii progress; [sbornik statey] (The Kirov District of Leningrad Strives for Technological Progress; Collection of Articles) Leningrad, Sudpromgiz, 1957. 171 p. 1,100 copies printed.

Resp. Ed.: Popilov, L.Ya.; Tech. Ed.: Kuznetsova, P.A.

PURPOSE: This book may be useful to personnel of the shipbuilding, instrument-making, machinery, chemical and metallurgical industries, and to personnel of the maritime and river fleets.

COVERAGE: This collection of articles describes the progressive experience of the industrial plants of the Kirov district of the city of Leningrad in the fields of shipbuilding, machine building, instrument-making, casting, hydrolytic and other industries. New manufacturing methods are discussed in the articles by V.F. Kovyzhkin, V.P. Kuznetsov, A.Kh. Starostenko, I.A. Maslov, A.L. Labutin, and Ya.M. Shmekker. It is stated that the plant "Krasnyy khimik" has developed and is using a new improved method of making citric acid with the use of tagged atoms. This method has increased production by 48 percent. The plant also makes use

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of a new method of producing magnesium salt which assures a 20 percent increase in production. No personalities are mentioned. There are no references.

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Popilov, L. Ya.

PHASE I BOOK EXPLOITATION

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Ivanov, Georgiy Petrovich, Candidate of Technical Sciences

Tekhnologiya elektroiskrovogo uprochneniya instrumentov i detaley mashin
(Technology of Electric Spark Hardening of Tools and Machine
Parts) Moscow, Mashgiz, 1957. 187 p. 7,000 copies printed.

Reviewer: Popilov, L. Ya., Engineer; Ed.: Astaf'yev, S. S.,
Candidate of Technical Sciences; Technical Ed.: Uvarova, A. F.,
Managing Ed. for literature on transport, highway and power
machine building (Mashgiz): Voskresenskiy, N. N., Engineer.

PURPOSE: This monograph is intended for engineers, technicians,
foremen, and electrotechnologists employed in machinery
plants.

COVERAGE: The book 1) explains the basic problems of electro-spark
hardening (nature of process, technology, and the harden-
ing technique), 2) describes new electro-spark equipment
developed by TsNIITMASH (Central Scientific Research
Institute for Heavy Machine Building), 3) presents the

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theoretical, physical and metallographic principles of electro-spark hardening, and 4) on the basis of numerous experiments determines the special physical properties and describes mechanical tests of hardened specimens. Furthermore, the book introduces electro-spark hardening technology developed on the basis of physical parameters of the process, describes the practical application of the technology to hardening of tools and machine parts, and explains full-scale testing of various hardened machine parts. Pages 15-18 present basic data on the application of the electro-spark hardening method at the Kirovskiy Zavod (Kirov Plant) in Leningrad, at GAZ (Gor'kiy Automobile Plant imeni Molotov), Uralmashzavod (Ural Heavy Machinery Plant) and Uralvagonzavod (Ural Railroad-car Plant). The new electro-spark hardening machines EAI-1 single-electrode, IYe-2, IYe-2M, IAS-2M (five-electrode) developed by TsNIITMASH during 1954-1957 are compared with the KEI-1 and the UPR-3M. Persons assisting the author in the TsNIITMASH laboratory experiments were: Senior Engineer V.P.Savukov, Foreman A.D.Bondarev, Candidate of Technical Sciences S.S.Astaf'ev, Engineer V.V.Borisova, and Foreman A.S.Yeremin. The bibliography lists 48 references, all of them Soviet.

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kand. tekhn. nauk, retsenzent,; KOSMACHEV, I.O., inzh., red,;
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POPILOV, L. Ya., inzh.

The third conference on electric and ultrasonic methods used in machining materials. Mashinostroitel' no.1:47 Ja '58. (MIRA 11:1)

1. Predsedatel' Komiteta elektroobrabotki Leningradskogo oblastnogo nauchno-tekhnicheskogo otdela Mashproma.

(Metal cutting, Electric--Congresses)

(Ultrasonic waves--Industrial applications--Congresses)

AUTHOR: Popilov, L.Ya., Engineer

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TITLE: Third All-Union Conference on Electrical and Ultrasonic Machining of Metals (3-ye vsesoyuznoye soveshchaniye po elektricheskoy i ultrazvukovoy obrabotke metallov)

PERIODICAL: Vestnik Mashinostroyeniya, 1958, Nr 12, pp 77-79 (USSR)

ABSTRACT: The Conference which took place in Leningrad is briefly summarised, except for papers concerned with basic physics. The conference was called by the Scientific and Technical Division of the Engineering Industry Organisation (NTO Mashprom), the ~~State~~ Scientific and Technical Committee of the Council of Ministers of the USSR (GNTK Soveta Ministrov SSSR) and by the Leningrad Economic Council (Leningradskiy Sovnarkhoz). Karmastin, V.F., of the Mechanical Engineering Works (Mashinostroitel'nyy zavod) of Tbilisi, reported on many years' experience in using coke-graphite electrodes in electro-erosion piercing. Copper plating greatly increased the electrode service life. Davydov, A.S., (Moscow), acquainted the conference with the electric resistance plant for preparing metal shot and powder by electric fusing as practised by a team at the Scientific

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Research Institute for Tractor and Agricultural Machinery
Manufacture (Nauchno-Issledovatel'skiy Institut Traktor-
nogo i Sel'skokhozyaystvennogo Mashinostroyeniya).
Using electric impulse fusing, powder and shot of differ-
ent size can be obtained from swarf, strip or other forms
of metal. Soluyanov, P.V., (Ul'yanovsk), reported on
electro-mechanical machining by low voltage current
proposed some years ago by Askinazi, B.M., and others.
Surface hardening of machine components by this method has
yielded an increased fatigue strength and better wear
resistance. In a paper by Yasnogorodskiy, I.Z.,
(Barnaul) entitled "New Experiences in the Application
of Metal Heating in an Electrolyte", problems of the so-
called spark hardening process in an electrolyte were
considered, which is based on thermal and thermo-chemical
phenomena taking place at the boundary between the cathode
and the electrolyte. The removal of metal is negligible
(not exceeding 5 microns), component distortion is absent,

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the initial strength is retained, and the surface finish preserved, whether ground or polished. In an electrolyte containing thiosulphate, sulphiding was achieved with a sulphur content in the solid solution reaching 0.8%. Connecting rod bolts had their service life increased tenfold by this method. Gudgeon pins, quenched by heating in an electrolyte, were 40% stronger than those quenched by high frequency induction heating. The industrial application of an automatic machine for quenching of gudgeon pins in an electrolyte (and other tractor components) has yielded 18 million roubles savings per annum in one plant alone. These automatic machines were developed by the Altay Scientific Research Institute for Heavy Engineering (Altayskiy Nauchno-Issledovatel'skiy Institut Tyazhelogo Mashinostroyeniya). The application of the electric upsetting automatic machine AE-5Sh, featuring heating in an electrolyte to the manufacture of headed pins for tractor track chain links yielded an annual economy of 10,000 tons of metal. Ayzenshtok, V.L., (Gor'kiy) gave information on the

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technical and cost features of a method of electric spark marking of hardened components adopted by his Works. The marking heads with manual or solenoid feed operate with a voltage of 30-55 V. The electric contact machining of polygonal ingots was dealt with by Yukhvid, M.Ye. (Moscow). Experimental work on electric contact fettling of stainless and other high alloy steels has shown that the cost can be reduced by a factor of 2-3.5 and labour productivity increased by a factor of 10-12. The working tool is a steel disc rotating with a peripheral speed of 40 m/sec. The voltage amounts to 10-32 V. Spiridonov, A.A., of the Urals Polytechnic Institute (UPI), Sverdlovsk, lectured on the analysis of the design of installations for vibrating arc deposition and discussed the production features of this process. The possibility of obtaining, in a single pass, deposition thicknesses of high quality up to 3 mm was noted. Babikov, O.I. (Leningrad) gave information on measures taken to increase the production of ultrasonic apparatus for workshop purposes

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taken by the Leningrad Economic Council (Sovnarkhoz). Kitaygorodskiy, Yu.I. (NITI, Moscow), discussed the basic principles in the development of a single series of standard ultrasonic generators of 0.5; 1.0; 2.5; and 10 KW output and a series of standard transducers. The frequency range selected of 18-22 kcps ensures the performance of every production task among the engineering uses of ultra-sound. Ol'shanskiy, N.A., of the Moscow Technical University (MTU, Moscow) reported on the use of ultra-sound in ordinary welding and as a source of power for the so-called ultrasonic welding. The effect of ultrasonic oscillation on a welding bath in the process of crystallisation improves the mechanical strength of the metal in the seam. In ultrasonic welding, the welded metal is not heated to the fusion temperature, nor are large plastic deformations applied. The demands on the cleanliness of the welded surface are less severe. Ultra-sound can be used for spot, seam or roller welding of similar or dissimilar metals as well as of non-metallic materials. Markov, A.I. (Moscow) reported on

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a combined method of machining carbide materials (reported in greater detail in Vestnik Mashinostroyeniya, 1958, Nr 12, pp 46-47). The method, covered by Russian patent Nr 109844, dated 14.1.1957, consists of combining the known ultrasonic machining set-up, with the application of direct current of 6-18 V, when the component is made positive and the tool, negative. Preliminary claims of trebling the rate of metal removal and reducing the tool wear to one half and less compared with ordinary ultrasonic machining, are made. KrumVol'dt, M.N. (Moscow) communicated the substance of certain manufacturing features in ultrasonic welding. Goryachev, N.S. (Moscow) gave examples of ultrasonic piercing and ultrasonic sinking of dies. A slot of 30 x 8 mm in 8 mm thick tungsten carbide took 98 minutes to cut with boron carbide Nr 120 abrasive at 20 kcps frequency and a double amplitude of 70 microns. A 7th grade surface finish was achieved. Kotov, Ye.P. (Moscow) gave procedures and conditions for ultrasonic cleaning on an industrial scale. Summaries of experience in this field were given by

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Rykov, N.S. (Moscow) and Savikina, Z.V. (Krasnogorsk).
In a communication from D'yachenko, P.I., Mizrokhi, Yu.N.
and Aver'yanov, V.G. of the Mechanical Engineering
Institute in the Academy of Sciences (Institut Mashinove-
deniya, AN SSSR), the investigations carried out at the
Institute on the ultrasonic cutting of diamonds were
surveyed. Information on an experimental machine for
this purpose was given. Tuzlukova, V.A. (NITI, Moscow)
gave examples of using the UZS-3M machine for the ultra-
sonic machining of hard and brittle materials (see also
Vestnik Mashinostroyeniya, 1958, Nr 11). Mezhuyev, B.N.
(MIFI, Moscow) communicated the results of studies to
clarify the production features of ultrasonic piercing of
ceramic and ferrite components with 0.2 mm diameter holes.
The production procedures of making carbide dies on the
ultrasonic piercing machine 1-UPS given in the paper by
Veroman, V.Yu. (Leningrad) envisages the following
sequence of operation: 1) Pre-drilling of holes in the
ground blank by the electric spark method at a high rate.
1 mm allowance for ultrasonic machining is left. The

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